

Changing Nature of the Workforce, Work and Business Organizations

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US Bureau of Labor Statistics

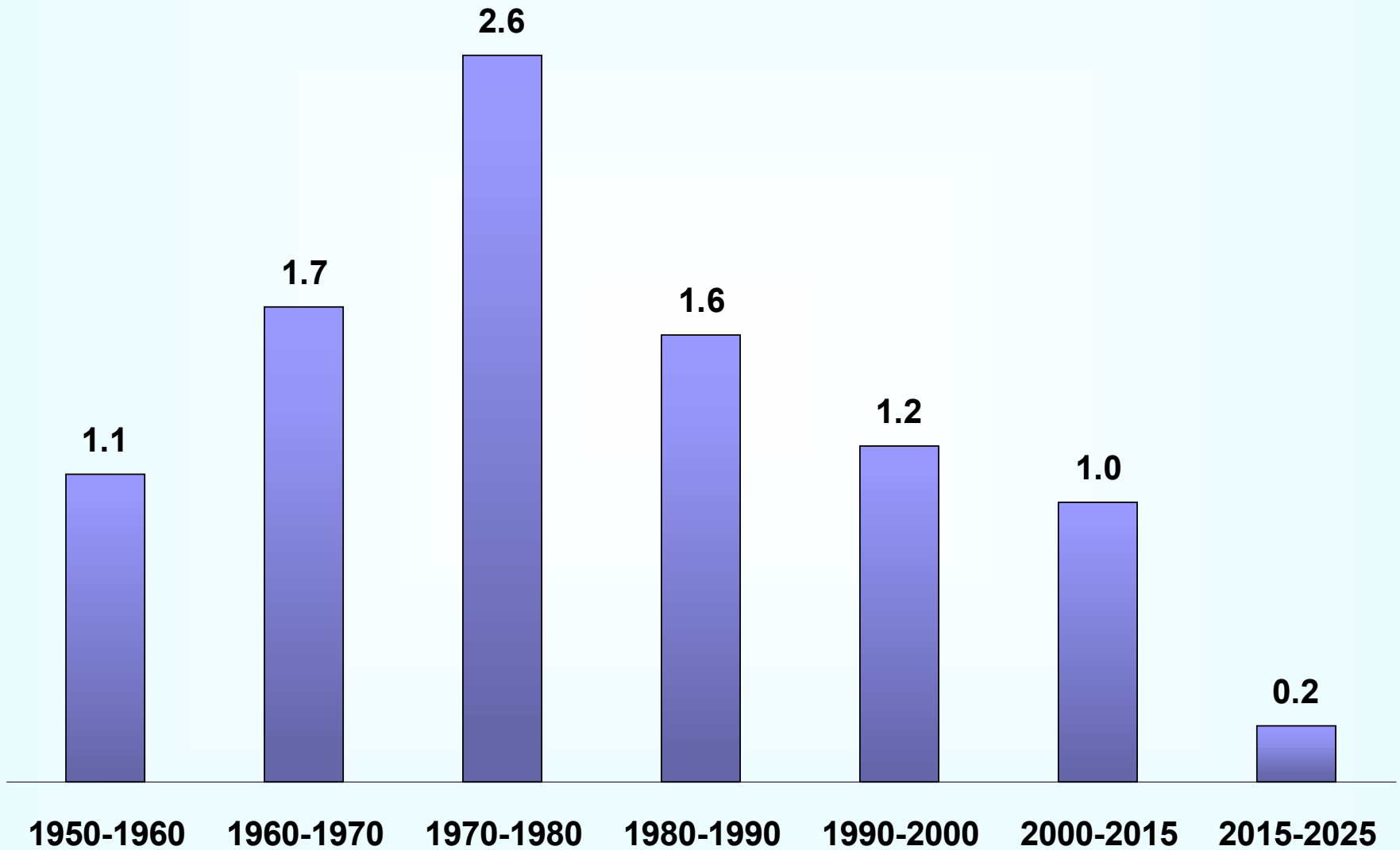
Main themes of the talk

- Demographic profile and trends in the workforce
- The changing distribution of jobs
- The growing flexibility of staffing and jobs
- The changing organization of work within the workplace

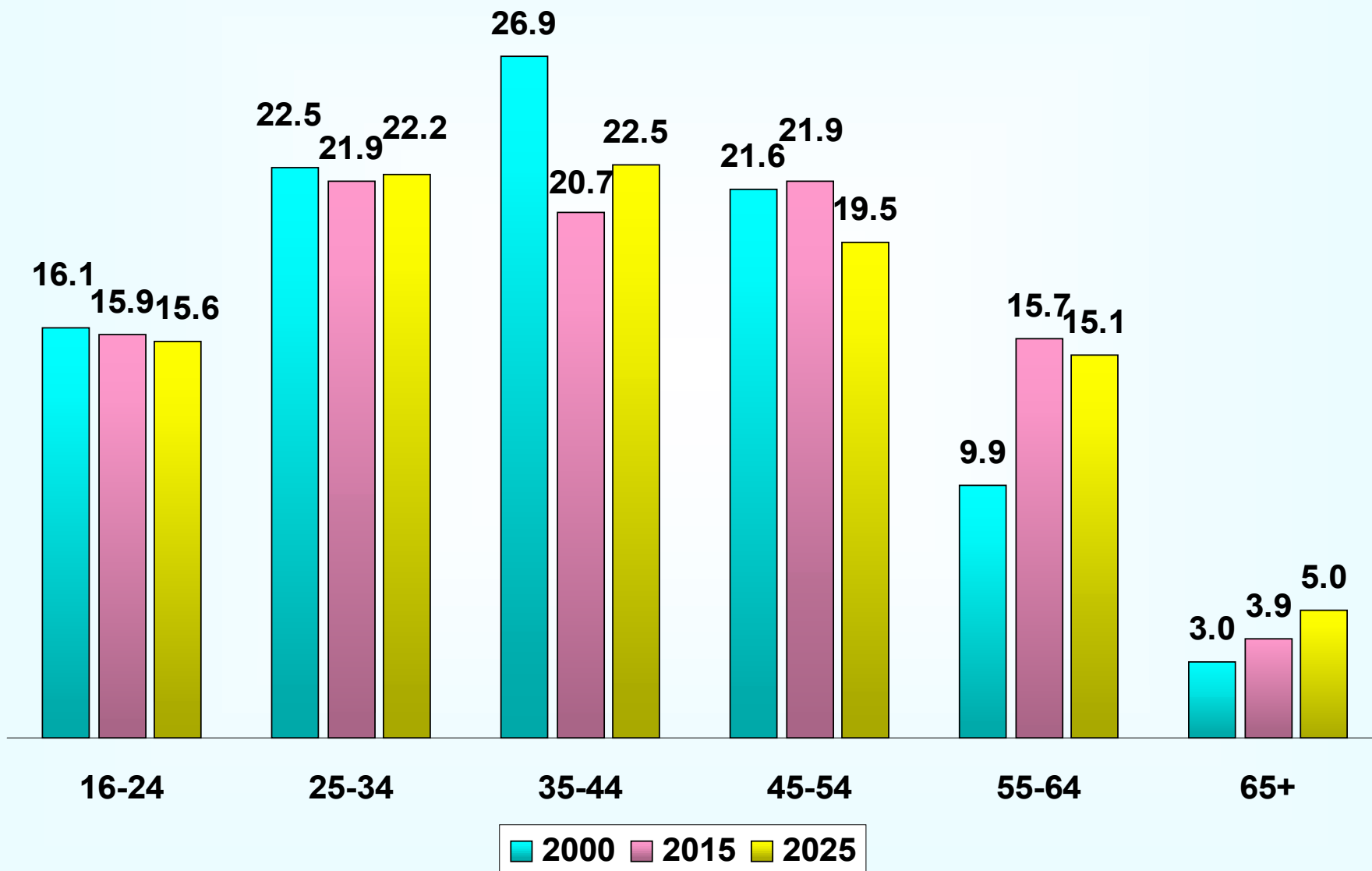
Demographic trends in the labor force

- Aging of the baby boom and subsequent baby bust imply
 - declining rate of growth of the labor force
 - advancing age of labor force
- Labor force growth will largely come from minorities
 - especially Asians and Hispanics due to immigration
- Women will increase their percent of the labor force slightly

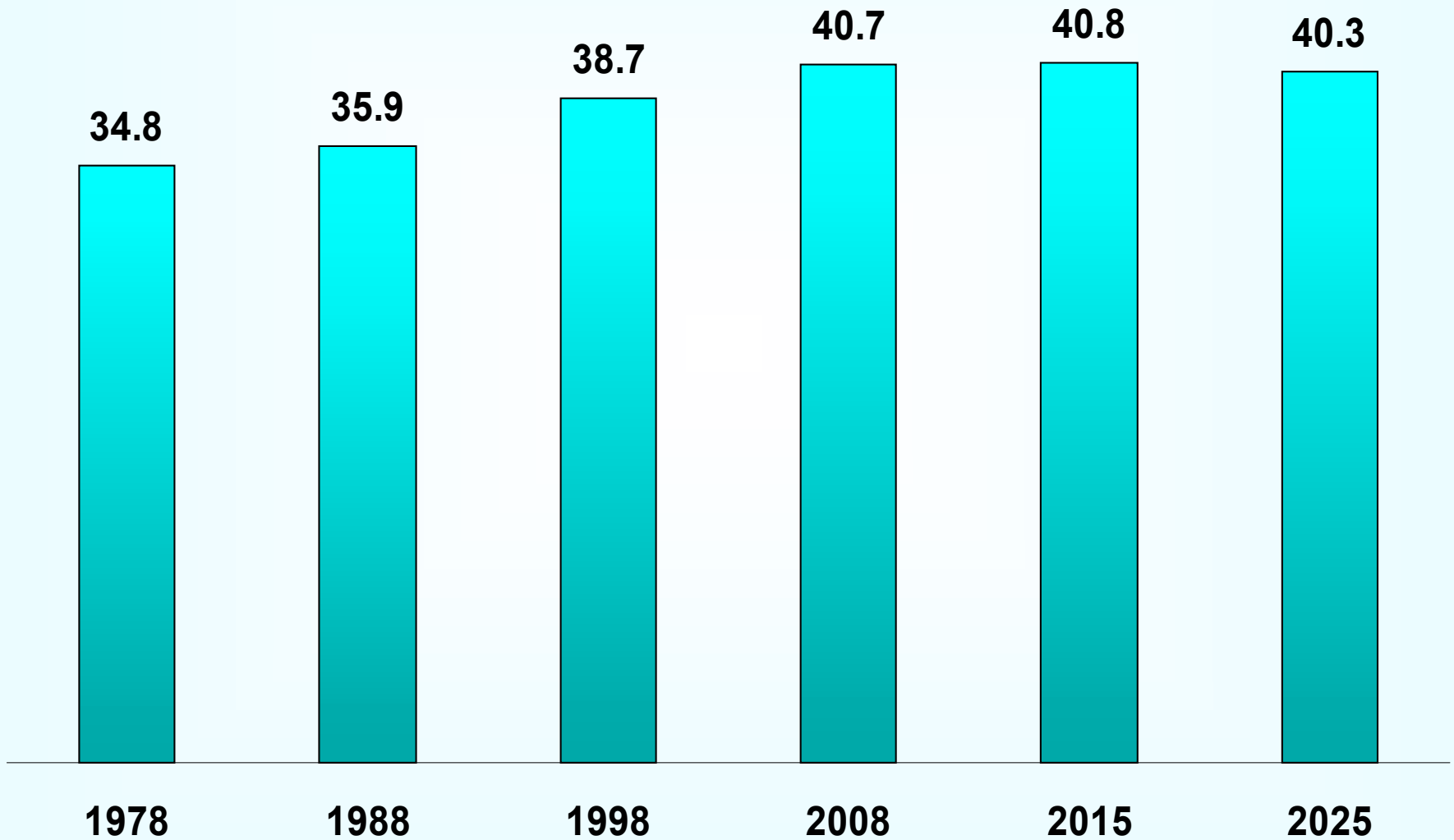
Annual rates of labor force growth, 1950-2025



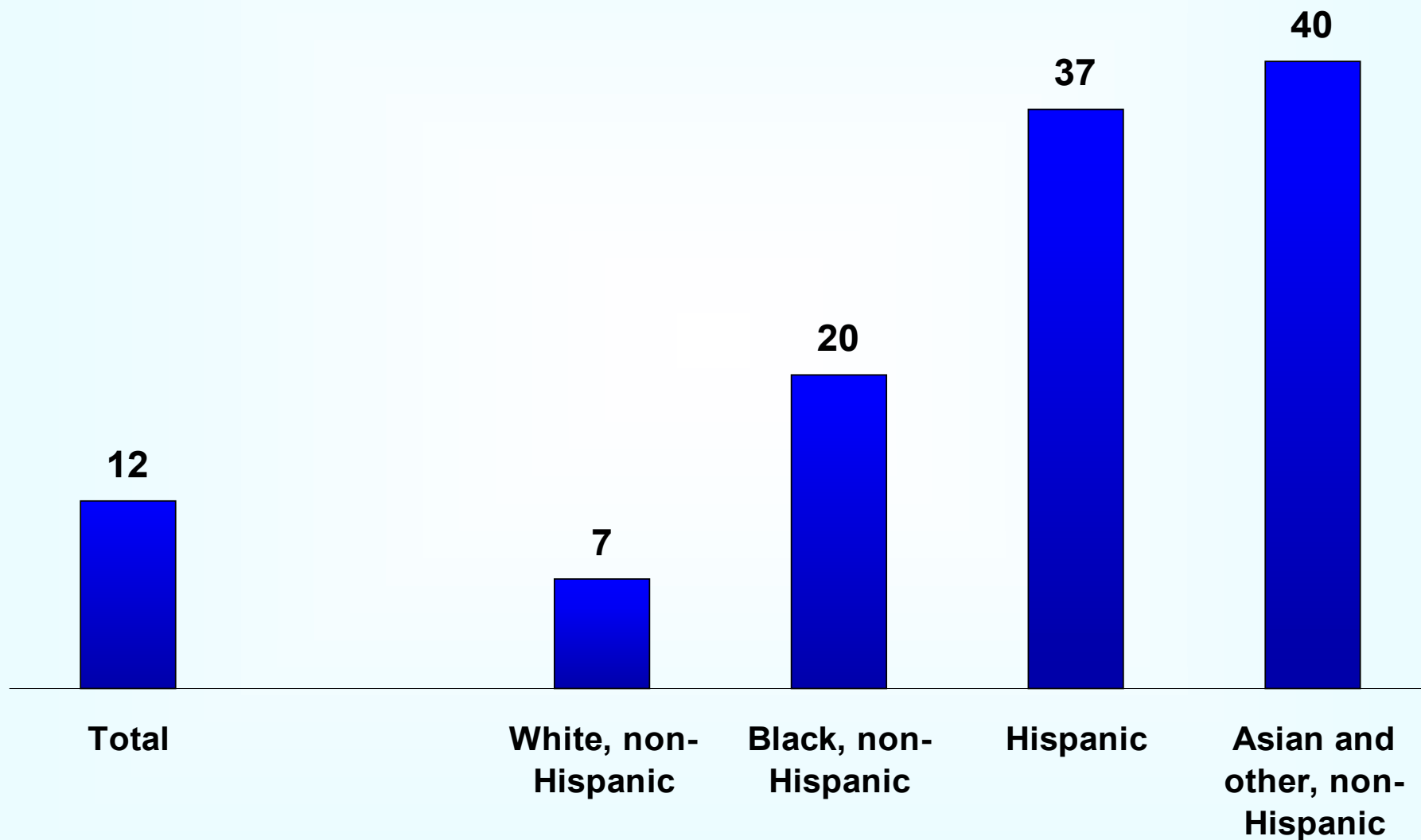
Age distribution of the civilian labor force, 2000, 2015, 2025



Median years of age of the labor force



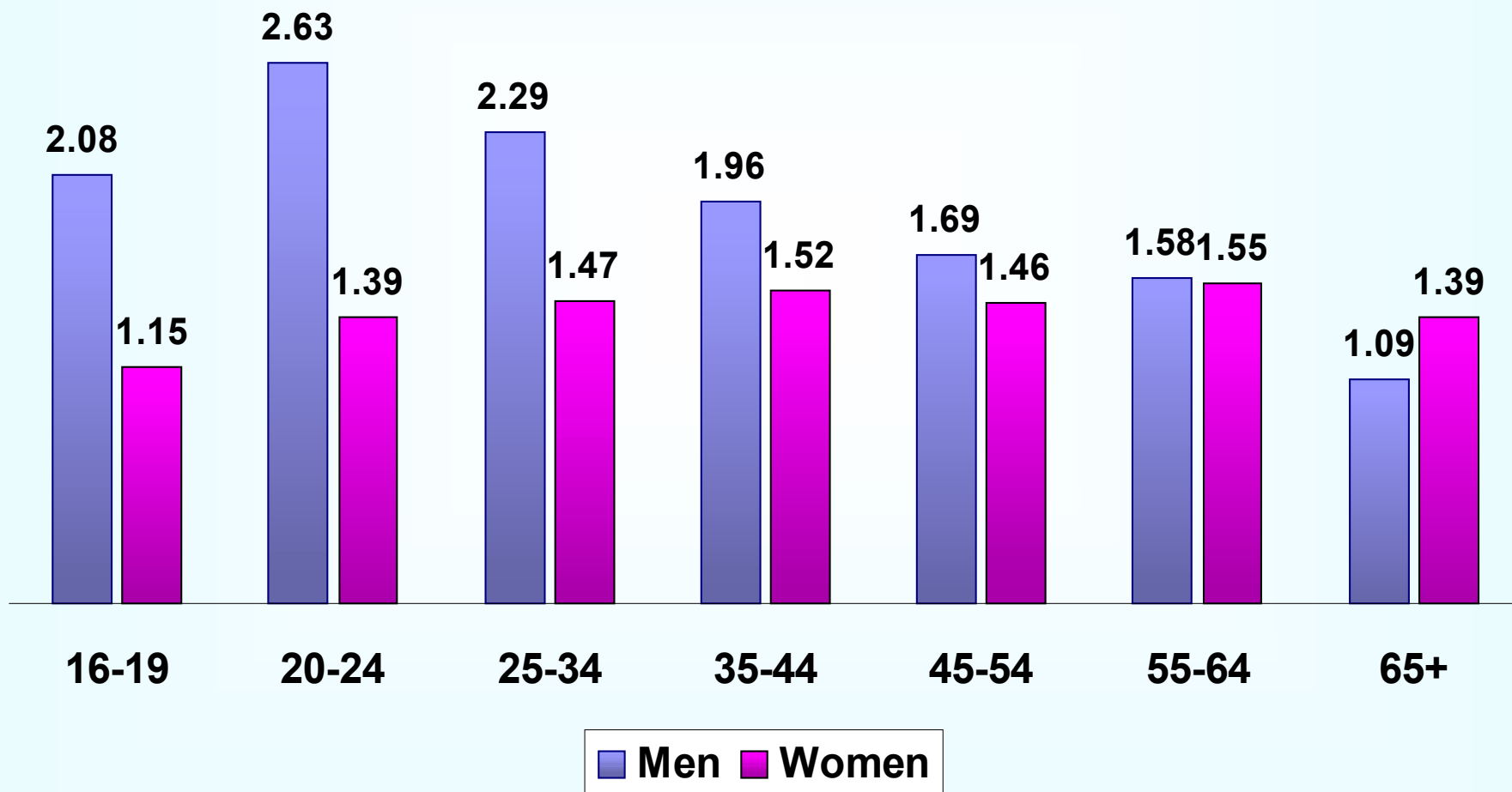
**Percent change in the labor force, by race and ethnicity,
projected 1998-2008**



Implications of demographic trends for OSH

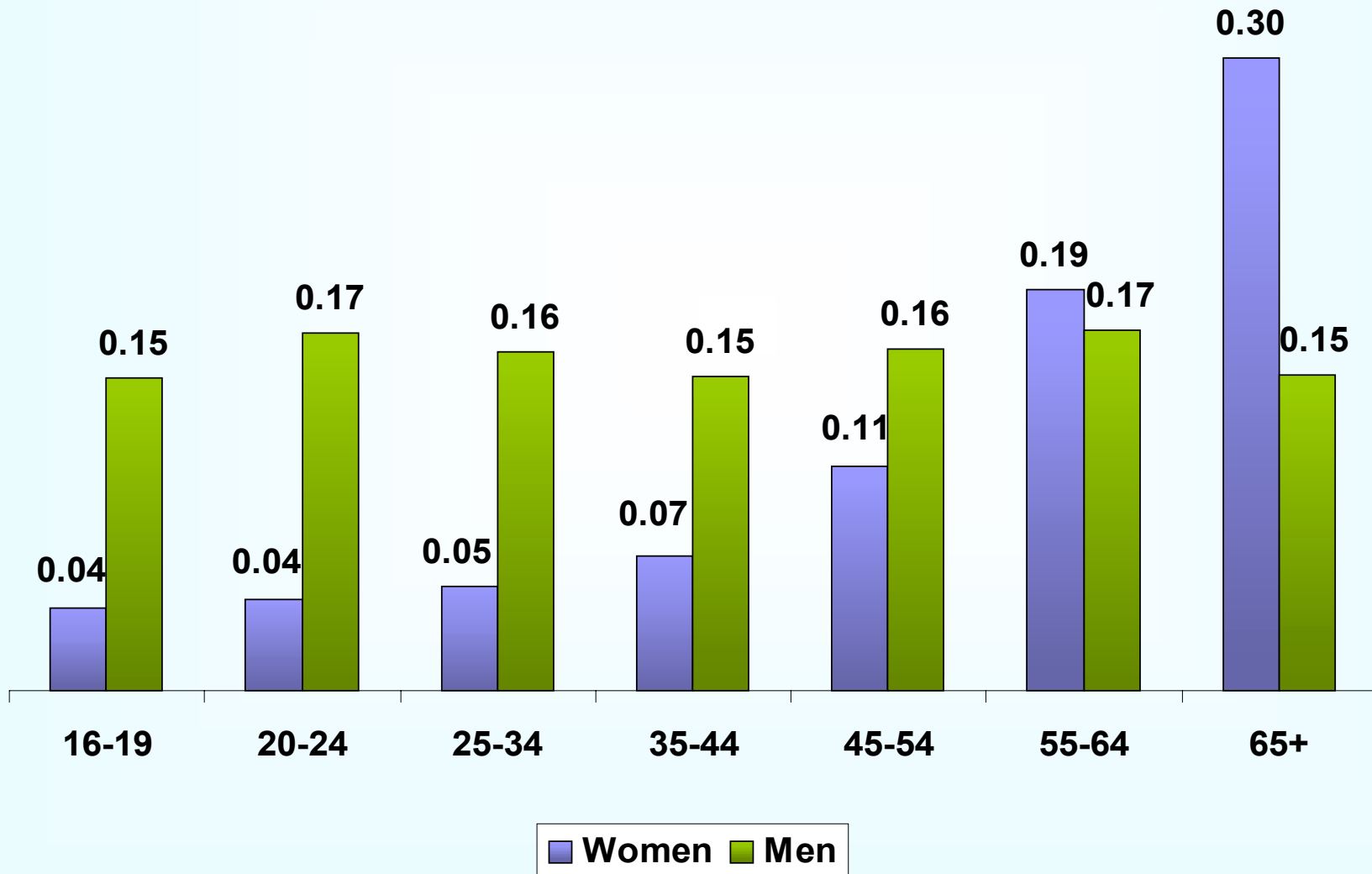
- Assuming no other changes, aging implies
 - decline in overall rate of days away from work
 - increase in the rates for certain types of injuries (e.g., fractures)
 - longer out-of-work spells due to injury
 - higher fatality rates
- Increased immigrant participation a possible problem due to language barrier
 - safety instruction in native language required

**Workplace injury and illness rates by gender and age
group, 1996-98**
(rate per 100 full-time workers)

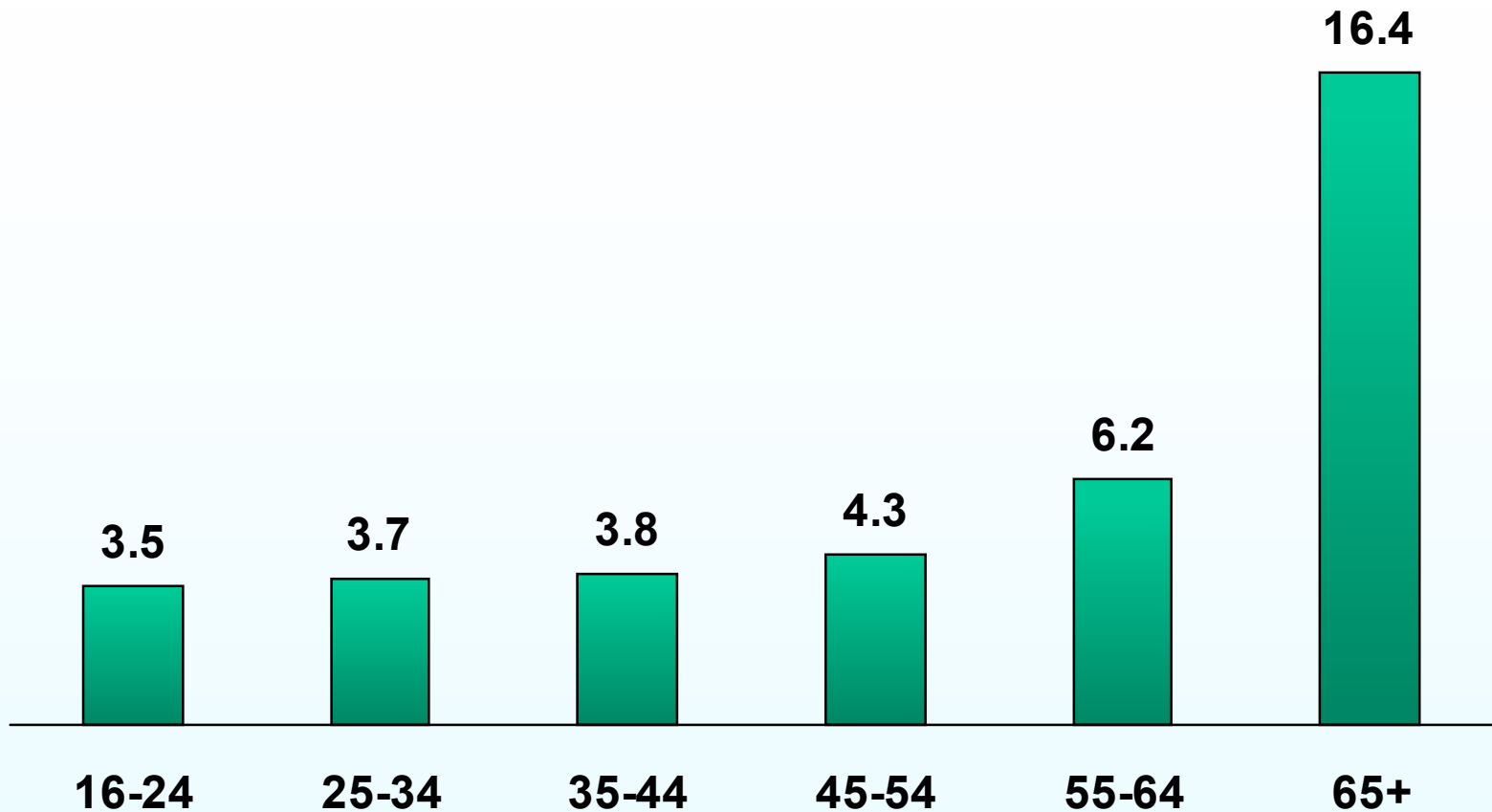


Workplace fractures resulting in days away from work 1996-98

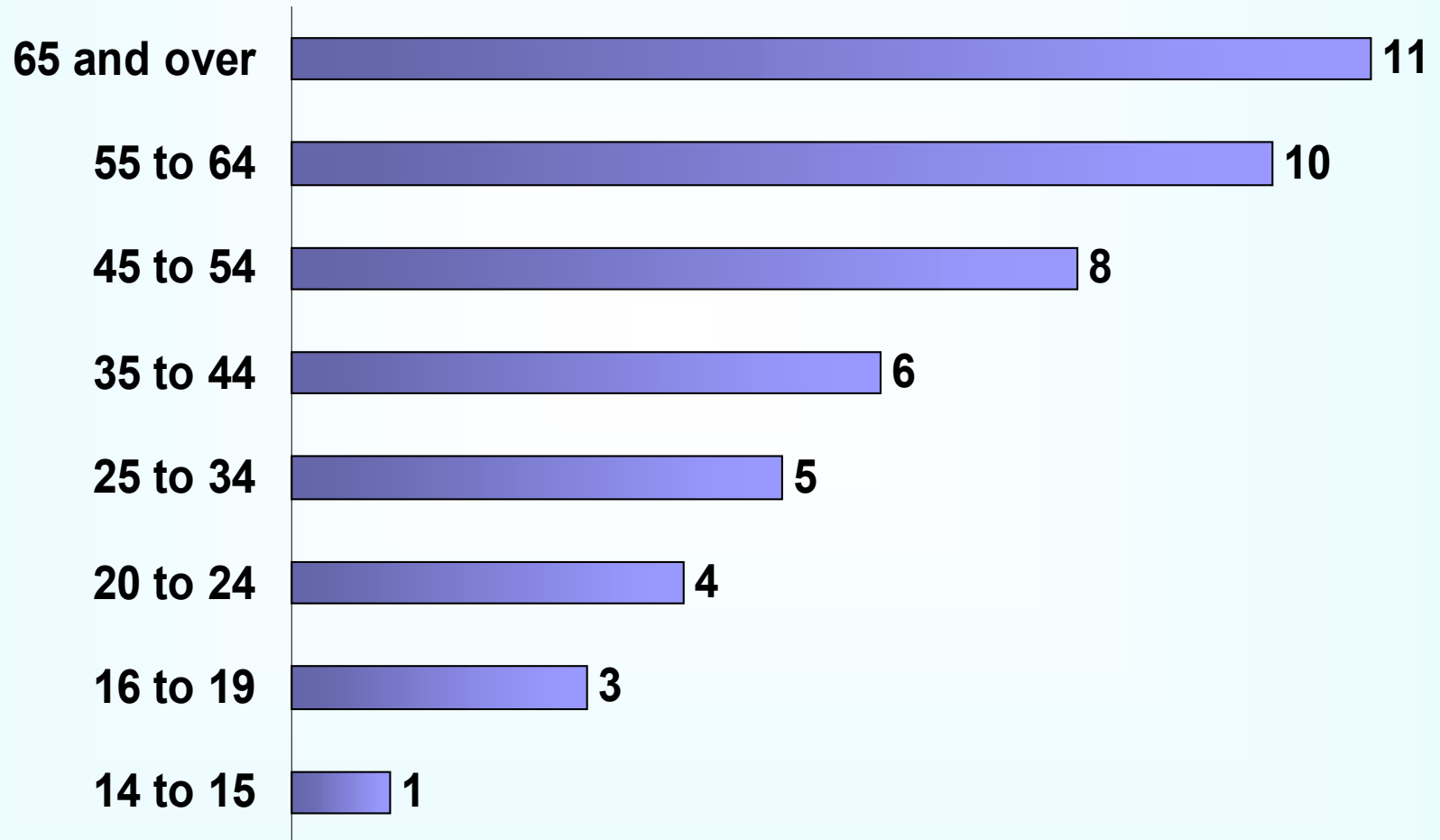
(rate per 100 full-time workers)



**Rate of fatal occupation injuries per 100,000 FTE
by age, 2000**



**Median days away from work due to nonfatal occupational
injury or illness by age of worker,
All United States, private industry, 1999**

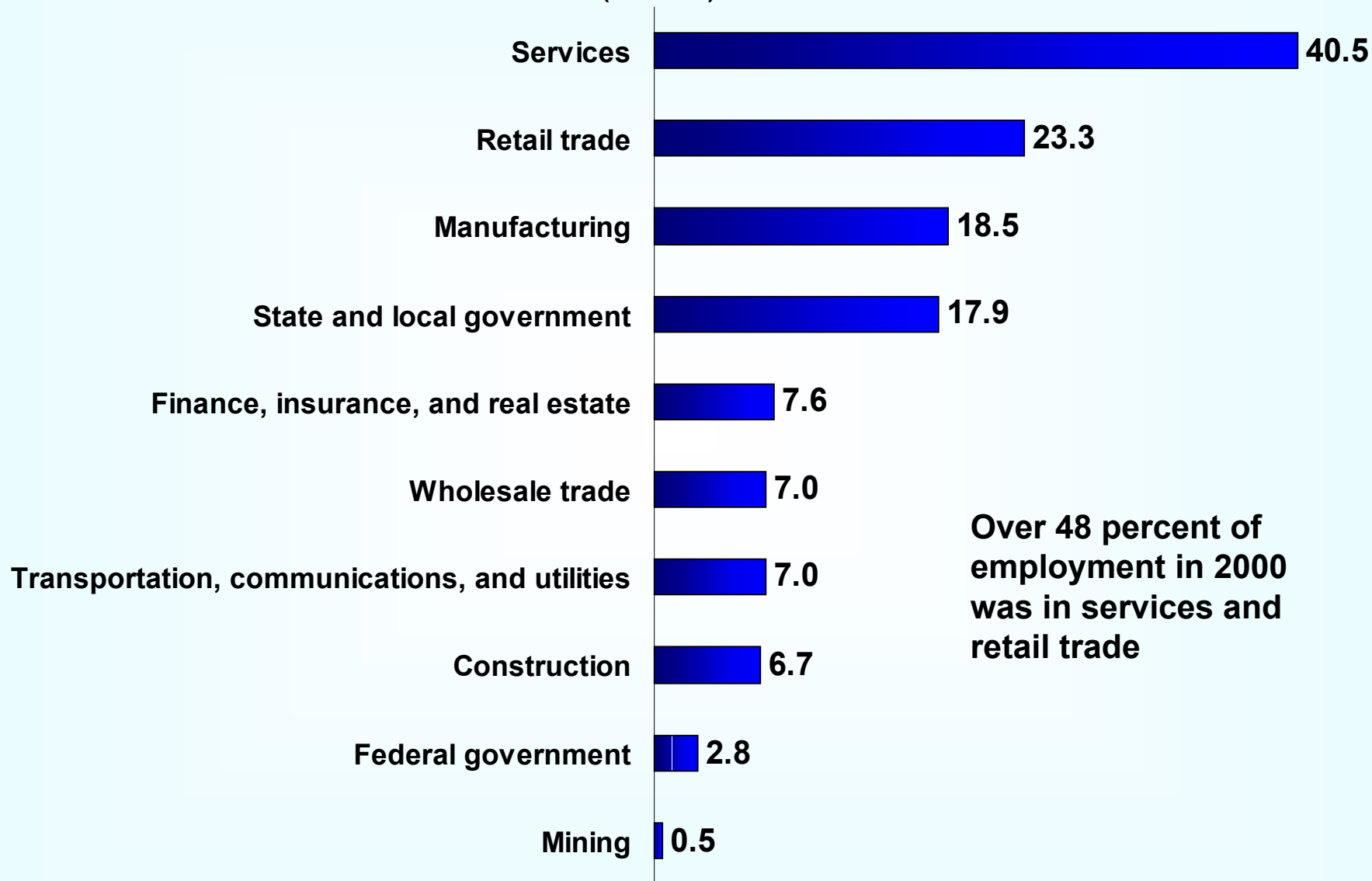


Median days away from work (all ages = 6 days)

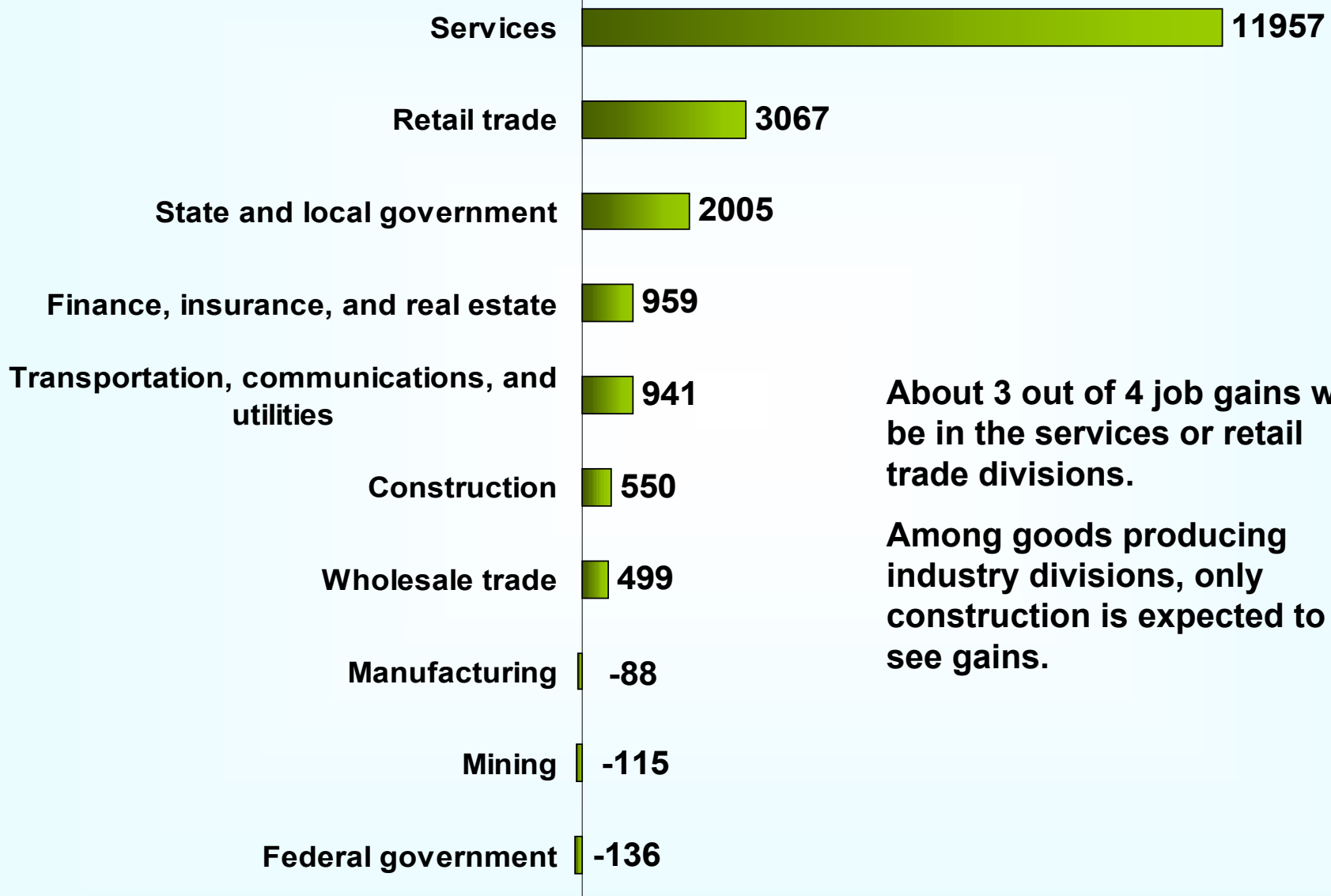
Where the jobs are and will be

- Service and retail industry jobs account for 48 percent of nonfarm wage and salary employment in 2000
- Between 1998 and 2008, these two sectors will account for nearly 3/4ths of nonfarm wage and salary job growth
- Among goods-producing industries, only construction employment will grow
- Computer and health occupations will show fastest rates of growth

Nonfarm wage and salary employment by industry division, 2000
(millions)



Nonfarm wage and salary employment change by industry division, projected 1998-2008

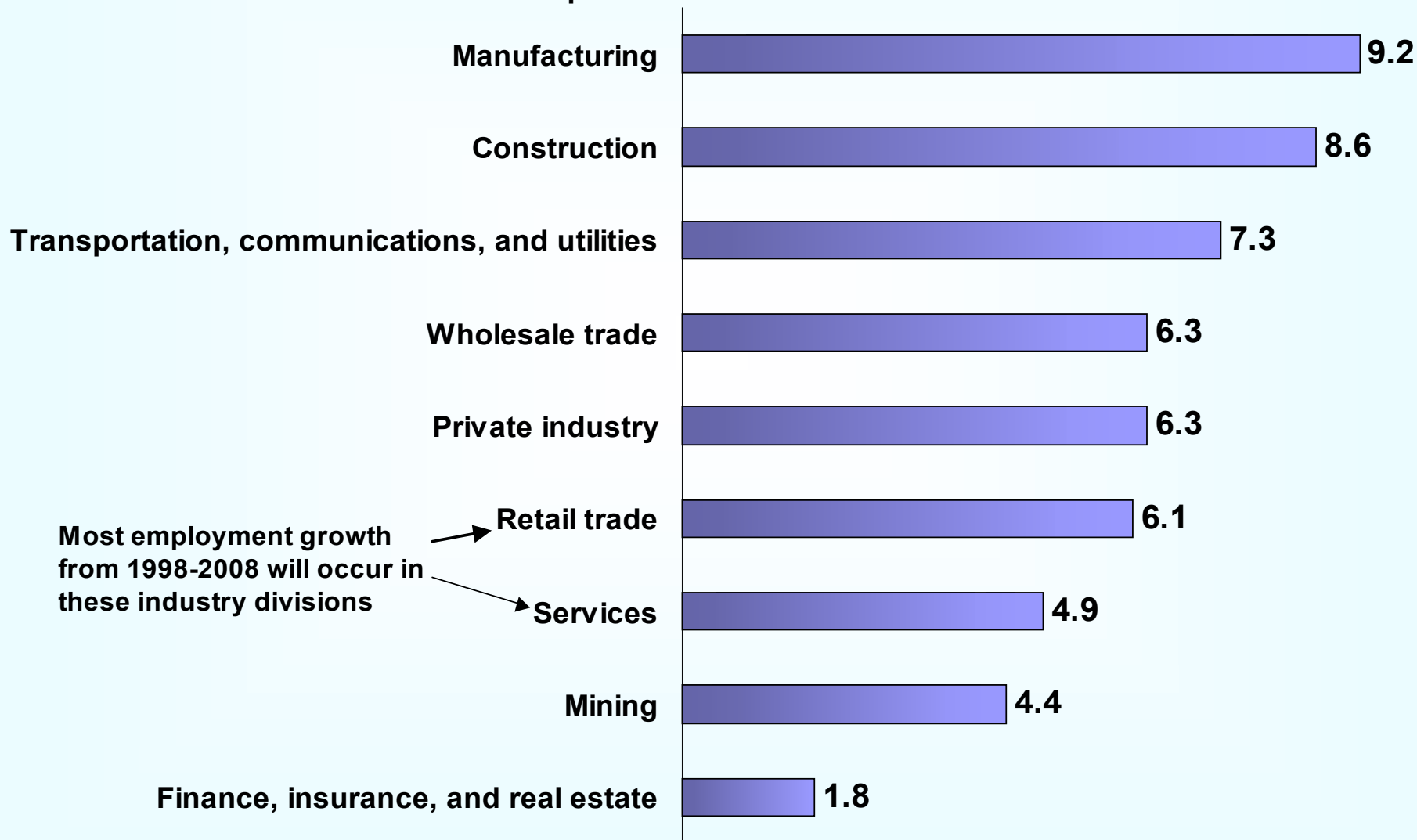


About 3 out of 4 job gains will be in the services or retail trade divisions.

Among goods producing industry divisions, only construction is expected to see gains.

Incidence rates of total nonfatal occupational injuries and illnesses by industry division, 1999

Rate per 100 full-time workers



Wage and salary employment growth by major industry group within services, projected 1998-2008

(Number in thousands)

Employment change
Number Percent

Business services

4,562 53

Health services

2,821 29

Engineering,
management, and
other services

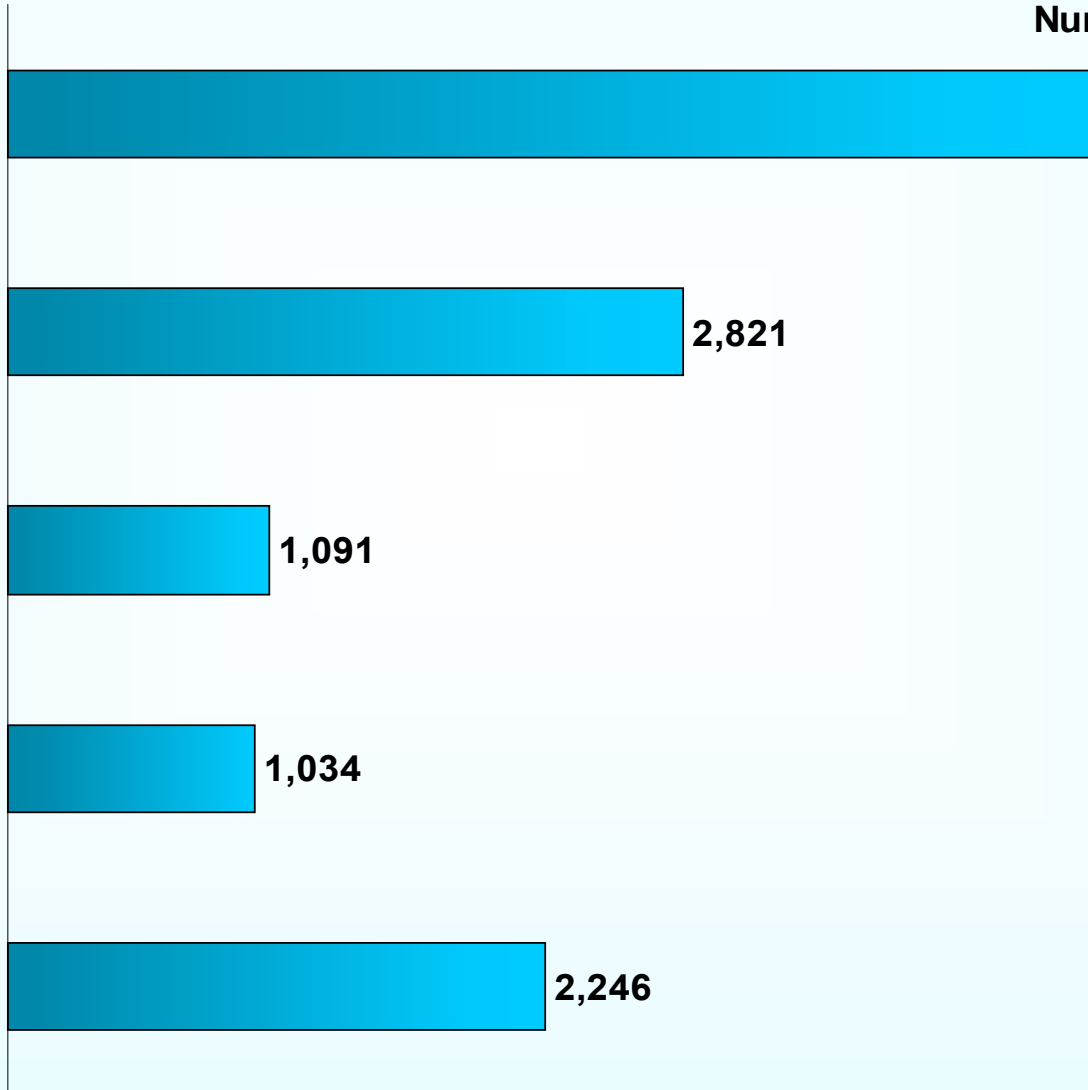
1,091 34

Social services

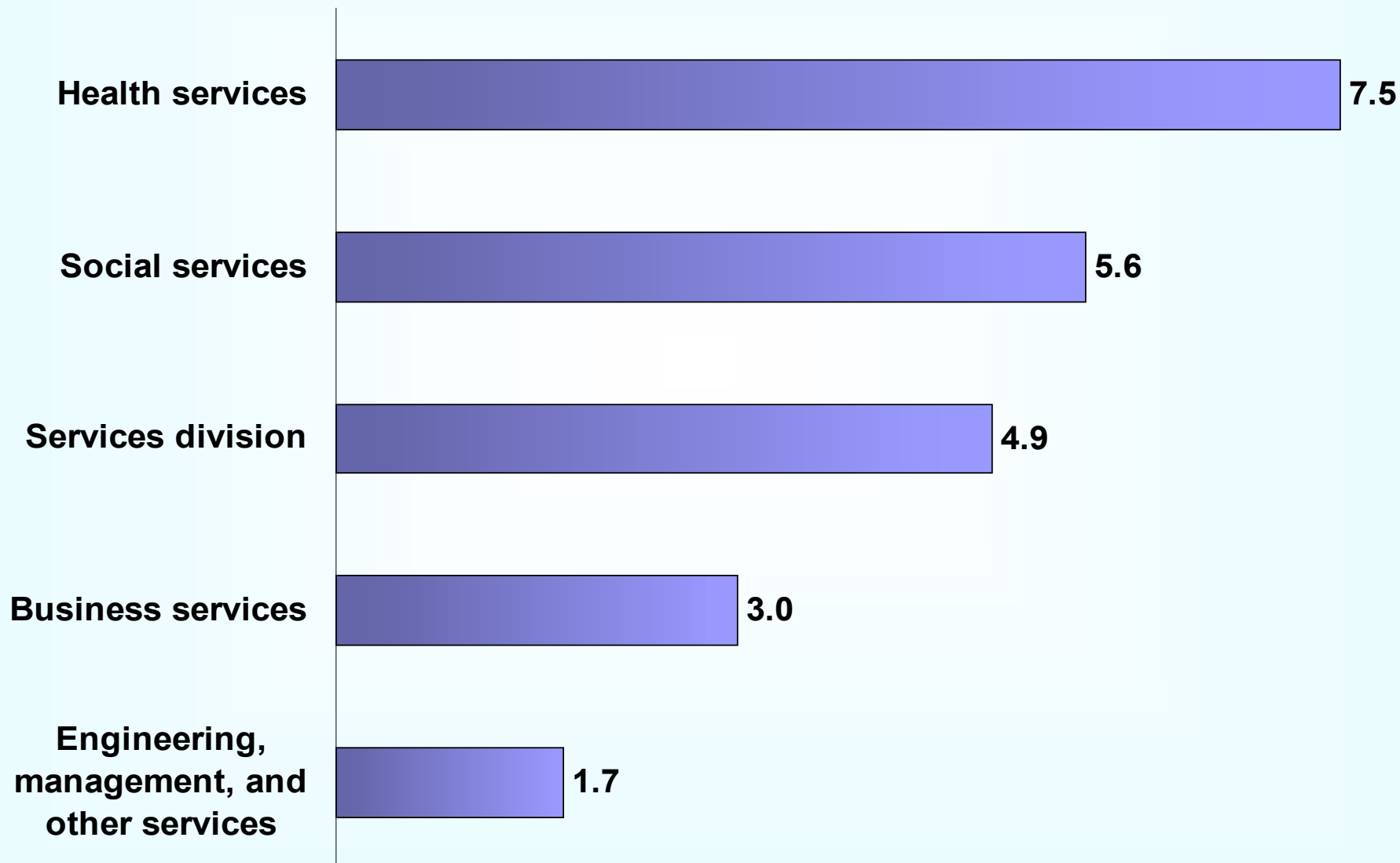
1,034 39

All other services
division groups

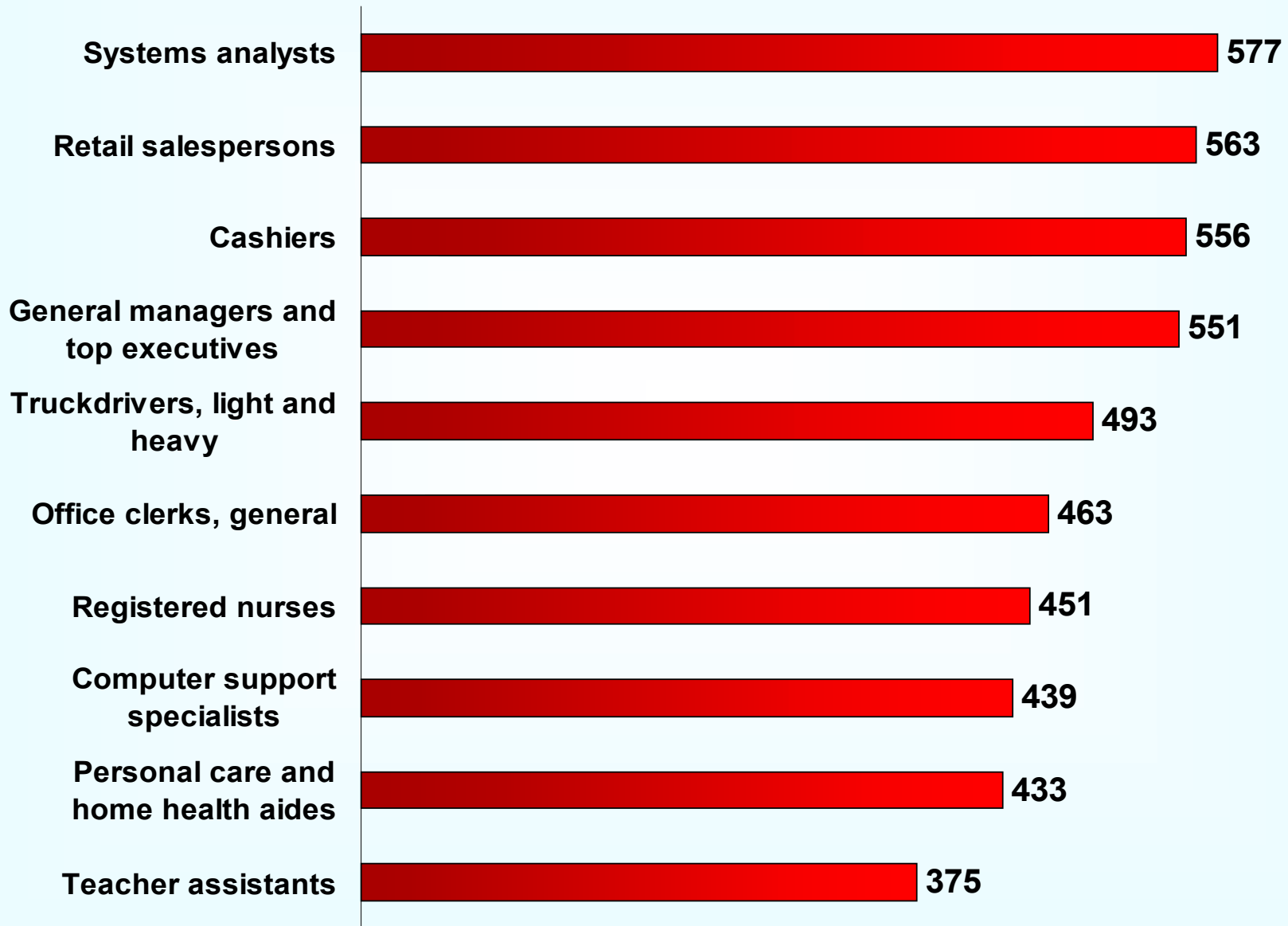
2,246 17



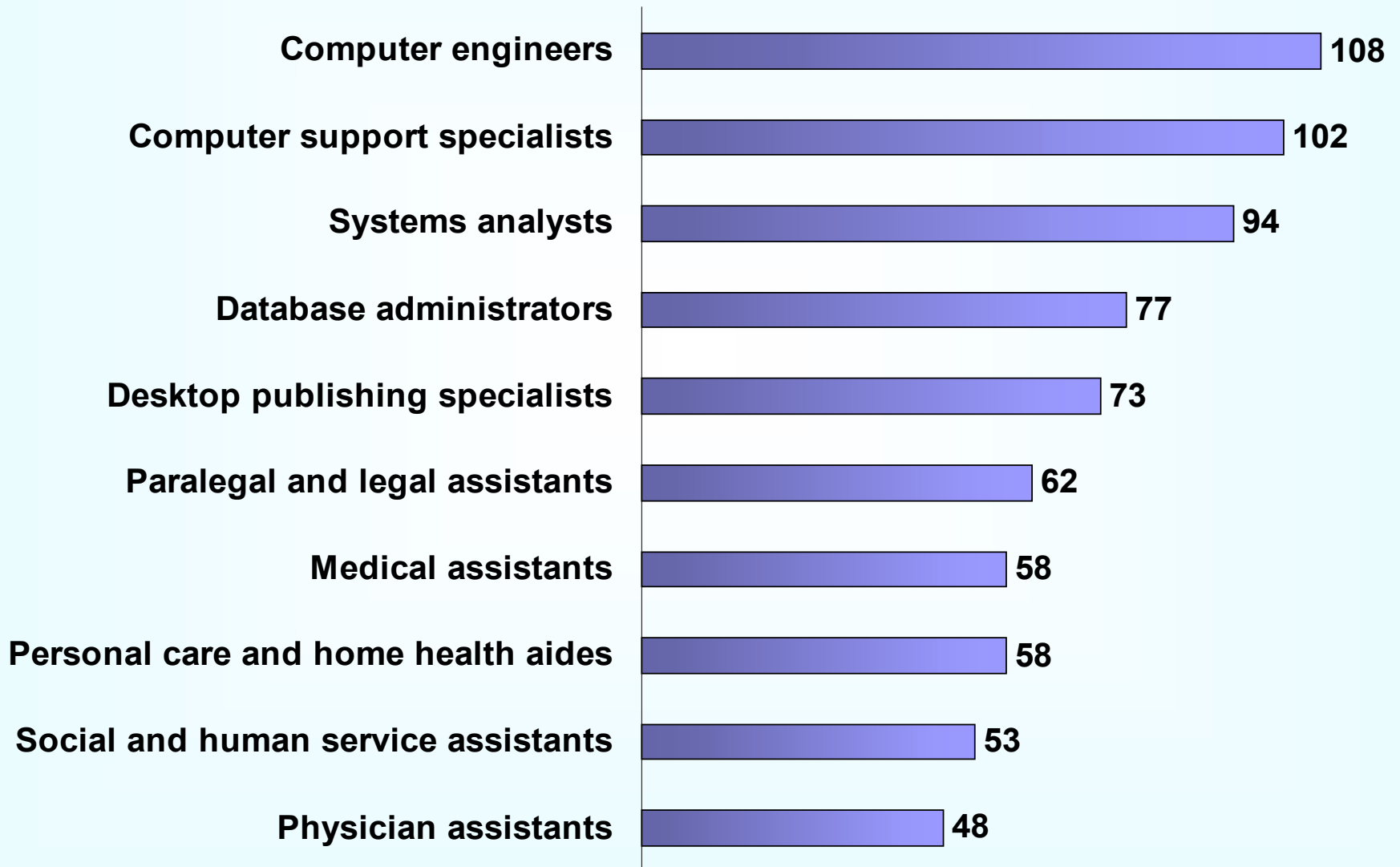
Incidence rates of total nonfatal occupational injuries and illnesses, selected services industry groups, 1999



**10 jobs with the most employment growth, projected 1998-2008
(in thousands)**



10 fastest growing occupations
Percentage change in employment, projected 1998-2008



Implications of job changes for OSH

- Blue collar and jobs in the goods producing sector--manufacturing, construction, and mining--have been traditional OSH focus
- But, most employment gains are in service occupations and the service producing sector
- These tend to be safer jobs
- But some, such as the in the health industry, are riskier than the average job

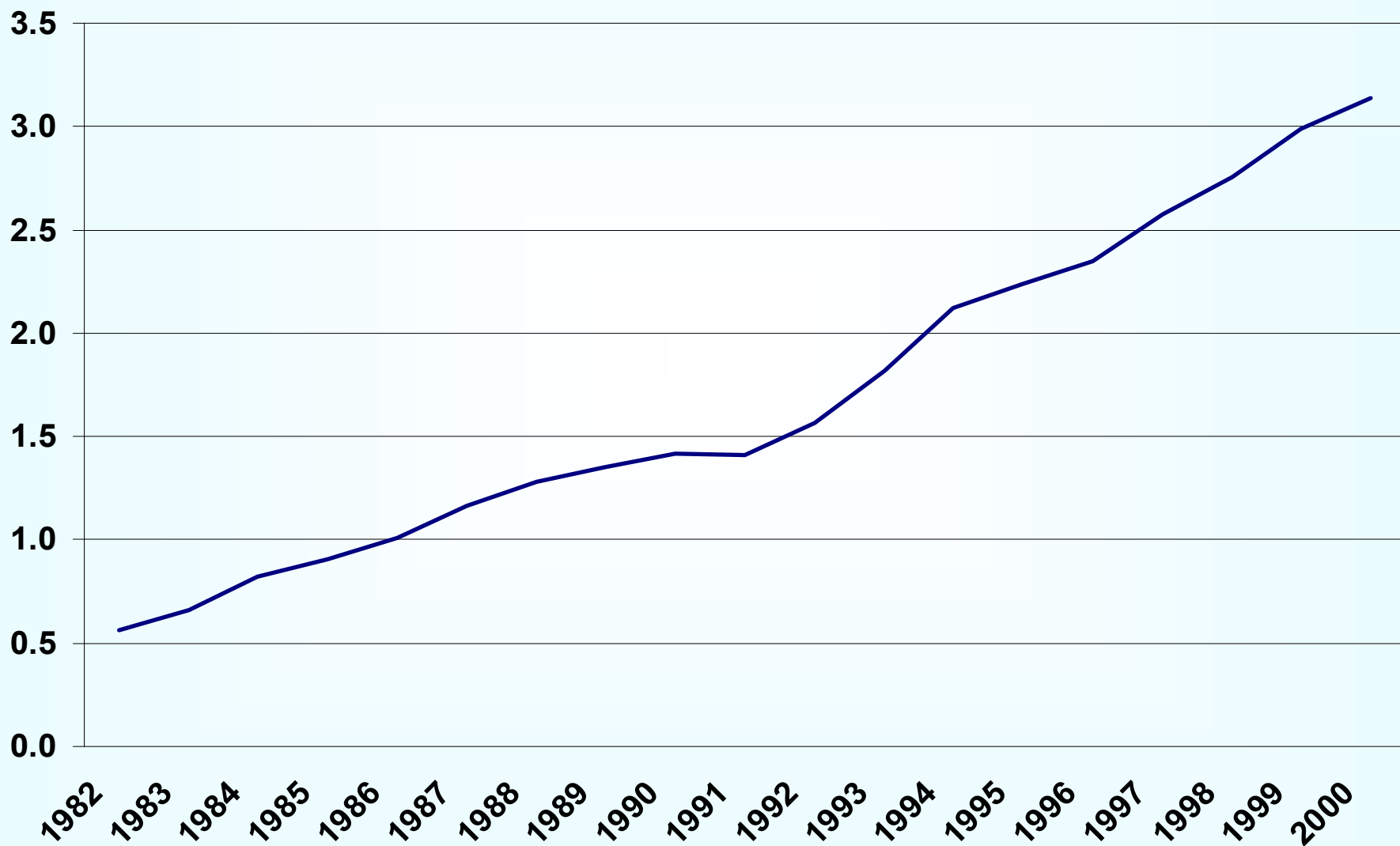
Use of flexible staffing is growing

- Traditional work
 - full-time
 - permanent
 - fixed work schedule
 - fixed location(s) of work
 - fixed job tasks
- Nontraditional work
 - part-time/self-employed
 - temporary
 - contracted out
 - flexible work schedules
 - work at home or on the go
 - variable job tasks

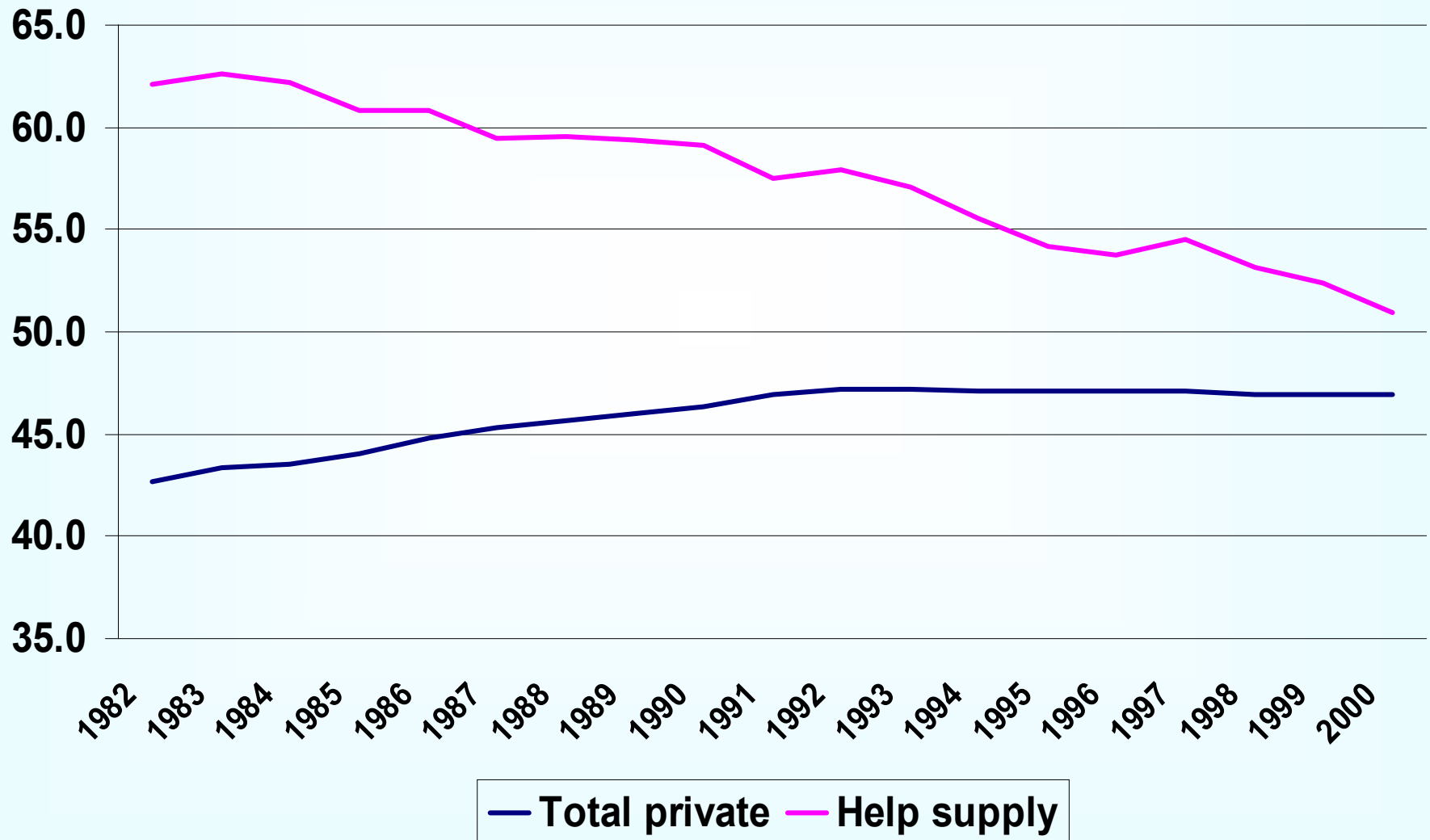
Temporary help employment has grown

- Firms in the “Help supply services” industry (SIC 7363) supply temporary employees to other businesses
- Temporary workers supplied for all types of jobs -- white collar, blue collar and service
- Part of “Personnel supply services” industry, one of the fastest growing industries in the nation

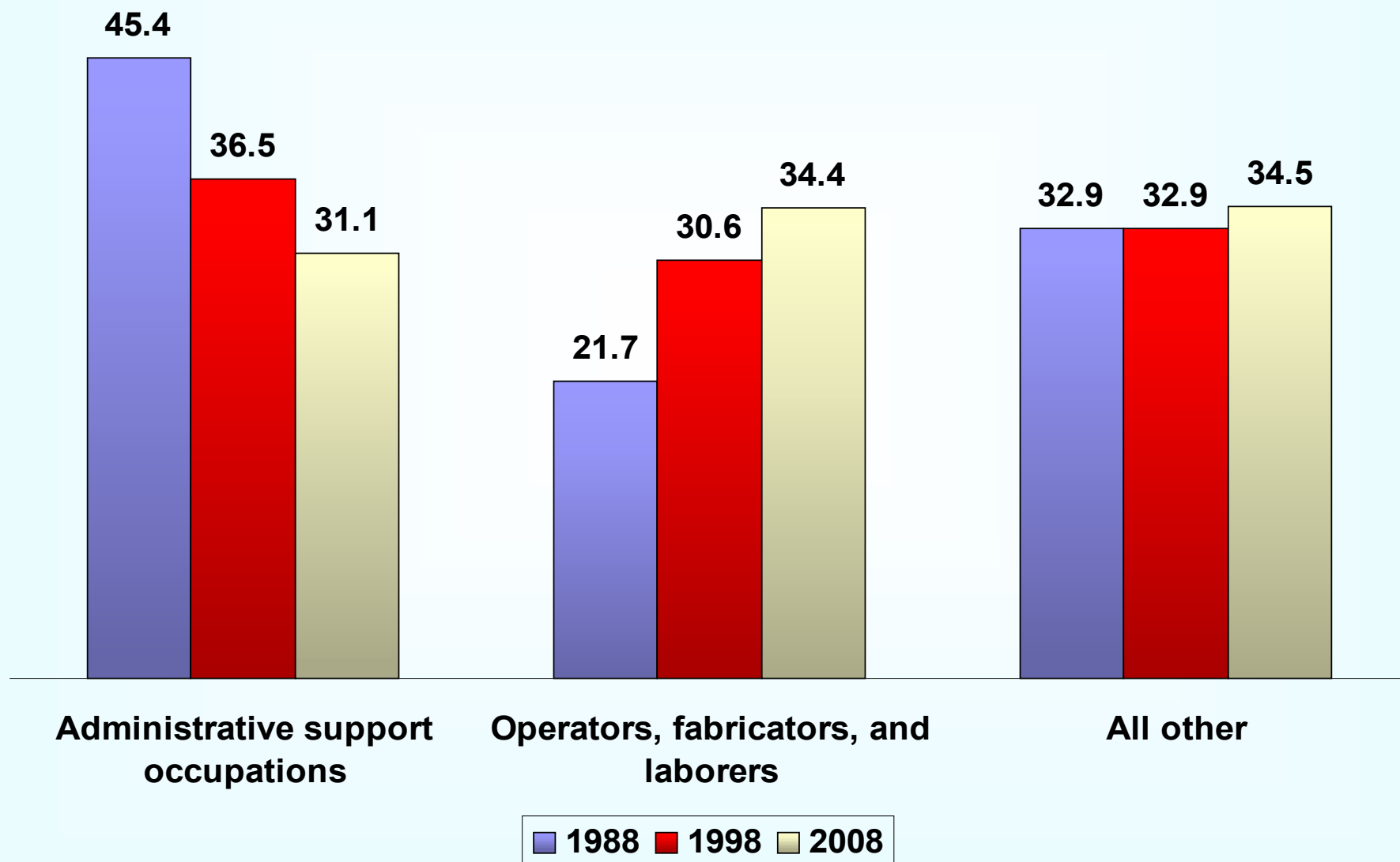
Help supply services (SIC 7363) employment as a percent of total private nonfarm employment, 1982-2000



Women as a percent of total private nonfarm and help supply services employment, 1982-2000



**Percent of personnel supply services (SIC 736)
employment, by occupation, 1988, 1998, and projected 2008**



Contracting out of labor services has grown

- Businesses are increasingly contracting out for services performed in the past by employees
- Examples:
 - payroll processing
 - security guards
 - janitorial services and grounds maintenance
 - computer and LAN maintenance
 - engineering and drafting services

Contracting out

- Many businesses providing these services are classified in the “business services” and “engi-neering and management services” industries
- As noted before, these industries will experience high employment growth from 1998 to 2008
- Growth in these industries may occur not only from increased contracting out
- Growth also occurs from technological improvements that create markets with new services

Self-employment grows in number but declines as a percent of jobs
Percent distribution of jobs by class of worker
1988, 1998, and projected 2008



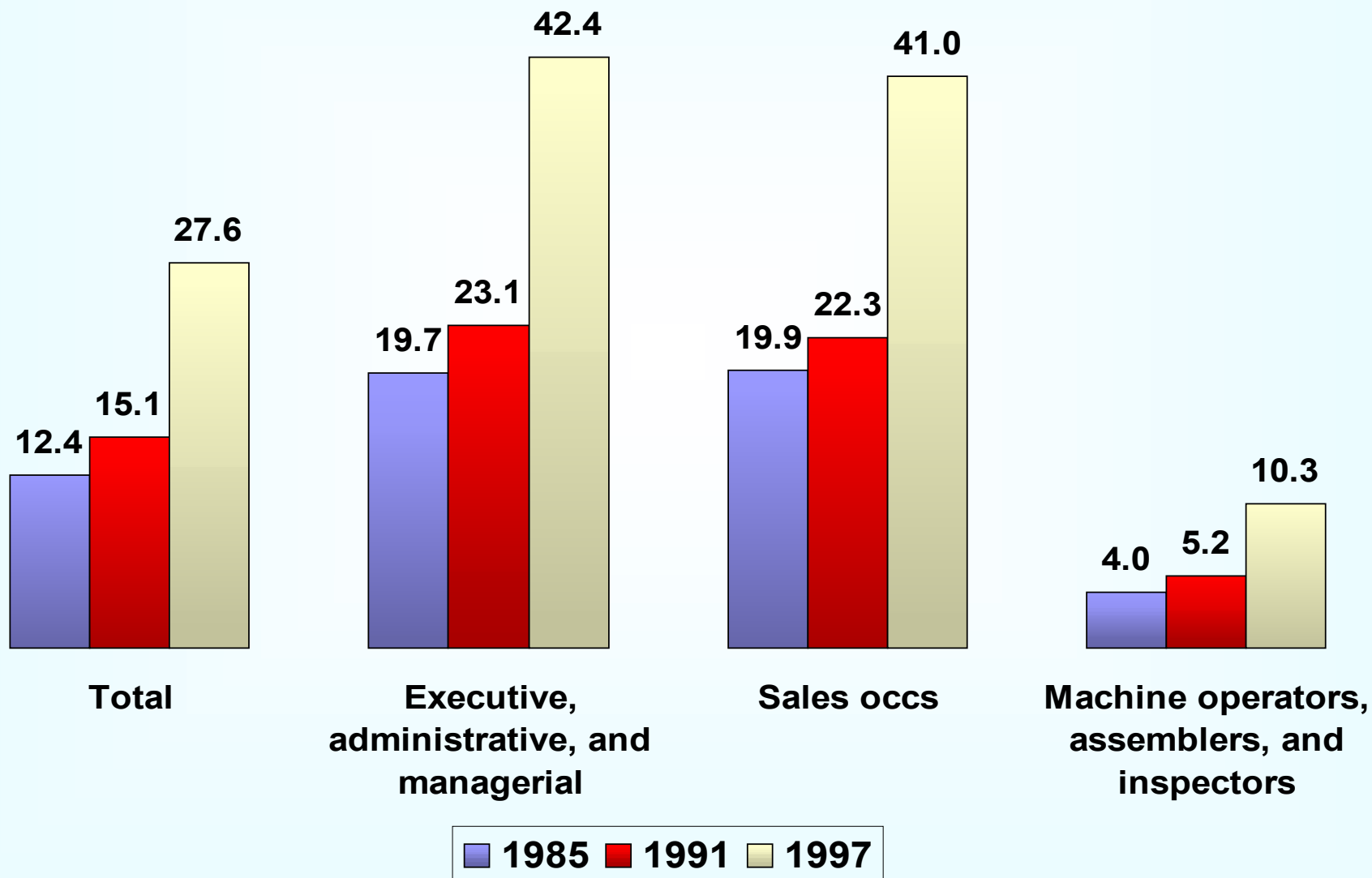
Implication for injury surveillance of growth in temporary help and contracting out

- Supervisory lines and responsibility for workplace safety and health are blurred
- Workers once classified in the industry of the employment site are now classified in the services industry
 - injury data may not reflect hazards of the employment site
- Employees may be exposed to hazards at multiple worksites

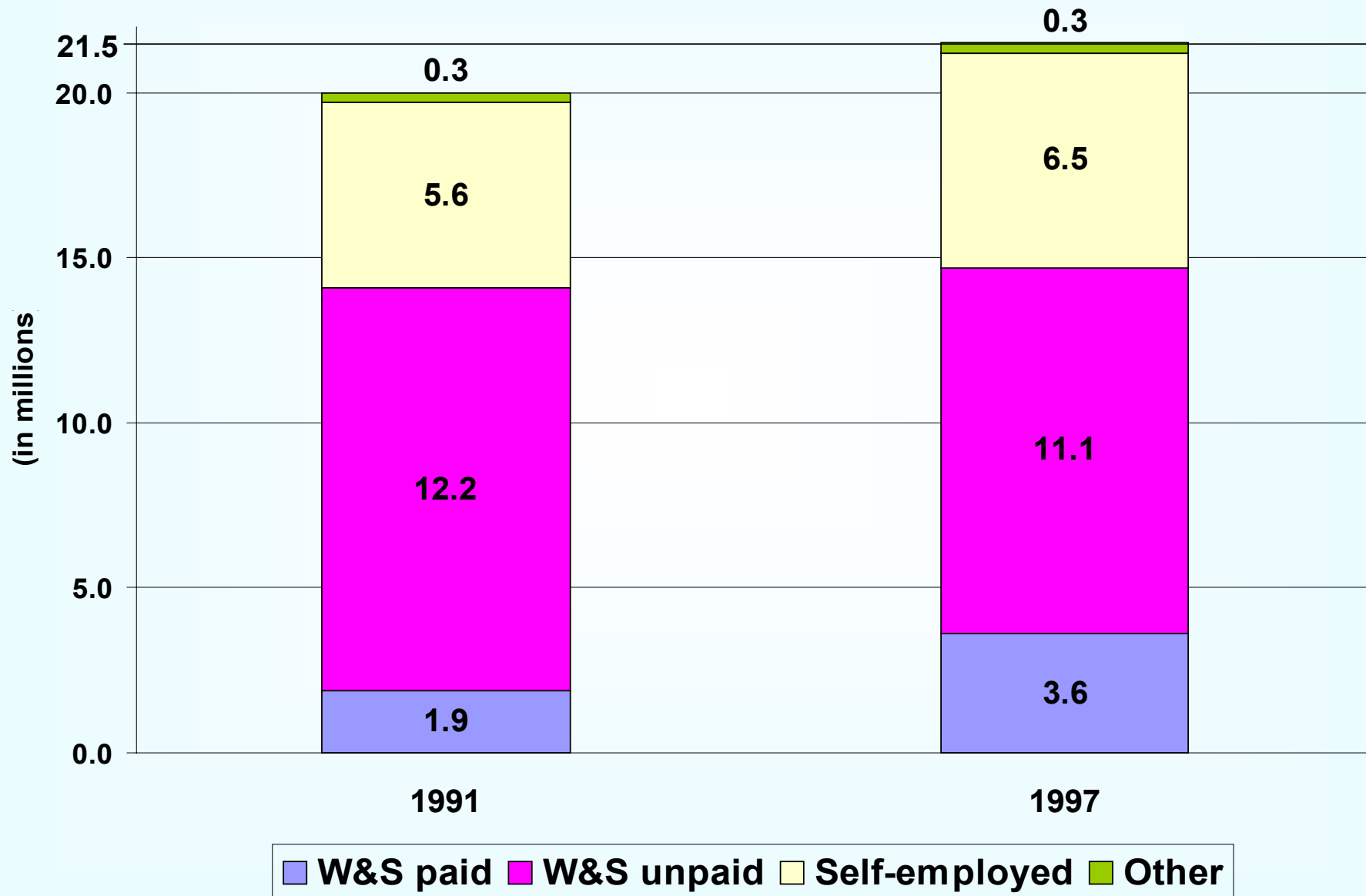
Flexibility of working hours and location of work are increasing

- The fraction of workers on flexible work hours increased from 1985 to 1997
- The fraction of wage and salary workers doing paid home work increased from 1991 to 1997
- But, the fraction of workers on alternative shifts (e.g., evening or night shift) remained relatively unchanged

Percentage of fulltime wage and salary workers on flexible work schedules, 1985, 1991, 1997



Work at home on primary job, 1991 and 1997



Impact of flexible work schedules and location on worker safety and health

- Where and when workers are injured will change
- They may happen more often:
 - at home offices or outside the office
 - outside the “traditional” 9-5 time period
 - to workers with weaker ties to the companies where they work

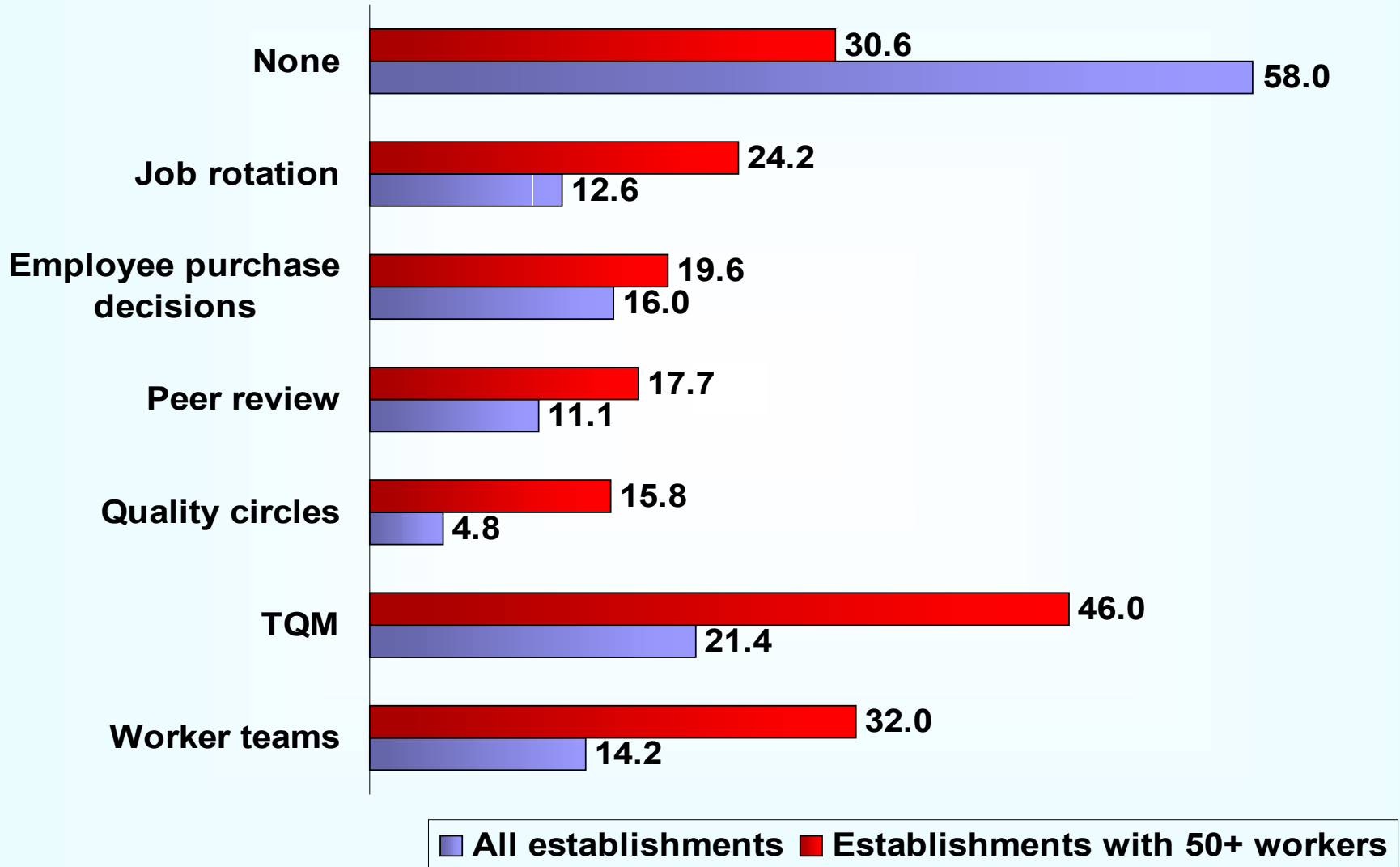
The use of “flexible” work practices has increased

- In the 1980s and 1990s, companies introduced a variety of workplace practices intended to
 - improve productivity and product quality
 - increase firms’ flexibility in work organization
- Spurred by international competition and rapid change in technology
- Companies introducing such practices have been called High Performance Work Organizations

“Flexible” work practices

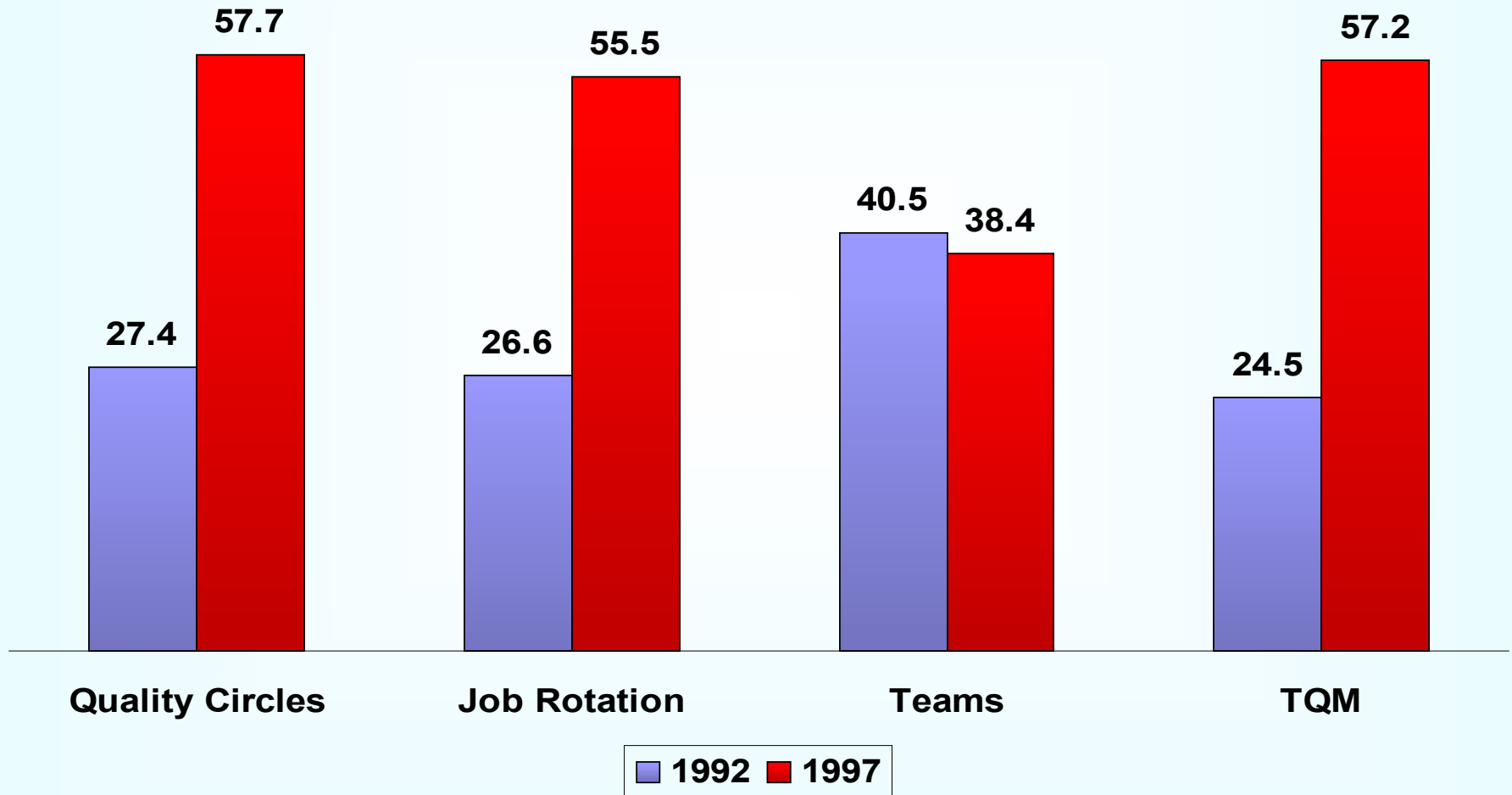
- Worker teams
- Total Quality Management (TQM)
- Quality circles
- Job rotation
- Peer review of employee performance
- Employee involvement in equipment purchases

Percentages of private industry establishment with alternative workplace practices, 1993



Source: BLS Survey
of Employer Provided
Training, 1993

Adoption of alternative practices by core workforce, 1992 and 1997



Source: National
Survey of
Establishments, 1992

Impact of “flexible” practices on OSH

- Job rotation can reduce repeated trauma
- But, workers may rotate to jobs to which they are unfamiliar
- Other practices may help workers identify and correct workplace hazards
- But, some critics believe these practices may be associated with speed-ups, increased repetition, and worsened safety and health

Technology: Improved IT and communications

- Computerized control of manufacturing processes (robotics)
 - shift to fewer, safer, higher skilled jobs
- Introduction of new office technologies
 - computer, printer, fax, advanced phone systems
 - higher office productivity
 - ergonomic problems associated with keyboards

Technology: Just in time inventories

- Businesses maintain inventories of:
 - raw materials and parts to prevent production line shortages
 - final goods to meet fluctuations in demand
- In the 1990s businesses reduced inventories due to
 - improved communications between businesses, suppliers and customers
 - computer inventory systems & barcode scanners
 - more efficient transportation network

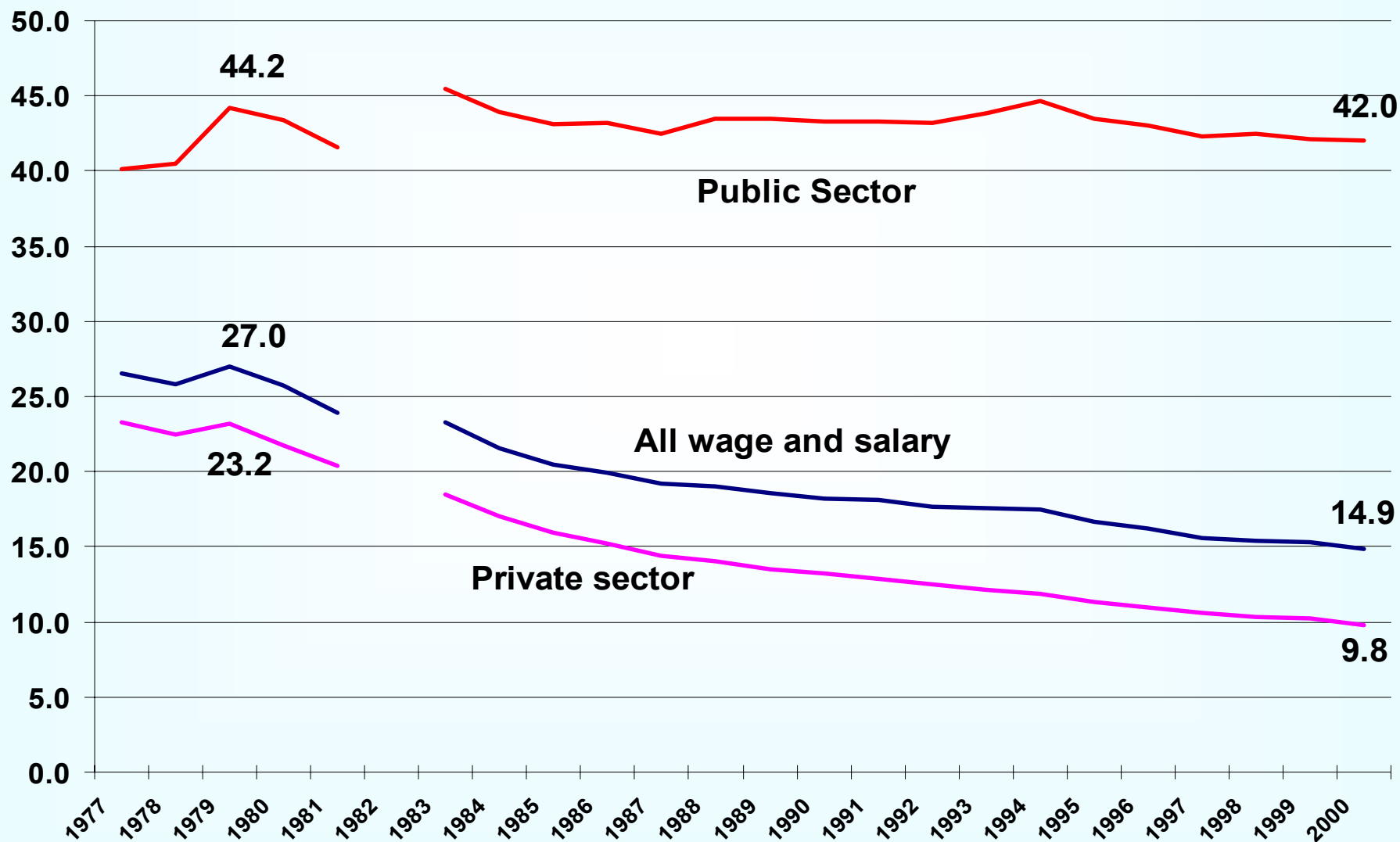
Technology: Just in time inventories

- Brenner, Fairris, and Ruser (forthcoming) show that, holding establishment characteristics constant, use of JIT is associated with higher CTD rates
- Why? One hypothesis requiring further study:
 - JIT reduces worker control of pace and timing of work
 - workers cannot maintain buffer stocks by working ahead
 - a similar and constant rhythm of work is established

Technology: Virtual offices & E-commerce

- Opportunities to work outside the office
- E-commerce
 - may reduce use of conventional stores
 - increase use of mail delivery services
 - reduce inventories

The percent of workers covered by union contracts has declined



Union impacts on workplace safety

- Unions provide a voice whereby workers' concerns about safety and health can be transmitted to management
- Unions negotiate specific workplace safety and health provisions in collective bargaining agreements
- Unions may influence the types of safety equipment and protection used
 - capital equipment versus personal protective devices

The workplace has become safer

Incidence rates of workplace injuries and illnesses for private industry, 1980-99
(Rate per 100 full-time workers)

